NWS FORM E-19 (COVER)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL WEATHER SERVICE

REPORT ON RIVER GAGE STATION

REVISED, PRINTED DATES: 1/24/2011, 1/24/2011

LOCATION: Reno
STREAM: Truckee River
BASIN: TRUCKEE RIVER HSA: REV

REFERENCES:

CA DWR TRUCKEE RIVER ATLAS, 6/1991
CORRESPONDENCE W/CITY OF RENO PUBLIC WORKS
CORRESPONDENCE W/CITY OF SPARKS PUBLIC WORKS
CORRESPONDENCE W/FEDERAL WATER MASTER, TRUCKEE RIVER
CORRESPONDENCE W/TRUCKEE RIVER FLOOD PROJECT
CORRESPONDENCE W/WASHOE COUNTY DEPT. OF WATER RESOURCES
CORRESPONDENCE W/WASHOE COUNTY EMERGENCY MGR
DE LORME XMaps V4.5
FEMA FLOOD INSURANCE RATE MAPS: RENO, SPARKS & WASHOE CO.
FEMA FLOOD INSURANCE STUDIES: WASHOE CO. NV & INCORPORATED AREAS
GOOGLE MAPS
NV BUREAU OF MINES & GEOLOGY, 1998: 1997 NEW YEARS FLOODS IN WESTERN NV
NV DEPT OF CONS & NATURAL RESOURCES: TRUCKEE RIVER CHRONOLOGY, 4/1997
NV DEPT OF CONS & NATURAL RESOURCES: THE FLOOD OF 1997; 5/1/1997
NWS: FEB. 1986 FLOODS IN WESTERN NV, 3/21/1986
TRUCKEE RIVER FLOOD PROJECT FLOOD INUNDATION MAPS
USBR, LAHONTAN BASIN AREA OFFICE, 1997 FLOOD HYDROGRAPHS
USCE FEASIBILITY RPT/EIS: TRUCKEE MDWS (RENO-SPARKS METRO AREA):2/1985
USCE FLOOD PLAIN INFO, TRUCKEE RIVER:RENO-SPARKS-TRUCKEE MEADOWS NV, 10/1970
USCE HYDROLOGY REPORT: TRUCKEE RIVER (CA & NV), 2/1980
USCE JANUARY 1997 FLOOD ASSESSMENT: E SIERRA/W NV BASINS, 9/1997
USCE: TRUCKEE MEADOWS, NV INFORMATION PAPER, 4/2000
USDA SCS; NV DCNR; CA RA: FLD CHRON, TKE R BSN, 1861-1976: 9/1977
USDA SCS, NV DCNR; CA RA: WATER & RELATED LAND RESOURCES:CENTRAL LAHONTAN BASIN: 7/1975
USGS FACT SHEET FS123-97, FLOOD OF 1/1997 IN THE TRUCKEE R BASIN; 8/1997
USGS FACT SHEET 037-97:FLOOD CONTROL EFFECTS,TRUCKEE RIVER RESERVOIRS,12/31/1996-1/4/97;3/1997
USGS FLOOD FREQUENCY ANALYSIS: 10/1/1969-9/30/2006 (4/25/2007)
USGS FLOODS OF NOV-DEC 1950 IN WESTERN NV, (1954)
USGS INSTANTANEOUS DATA ARCHIVE WEBSITE (http://ida.water.usgs.gov)
USGS GAGING STATION DESCRIPTION FOR RNKN2 (KIETZKE SITE), 11/12/1997
USGS GAGING STATION DESCRIPTION FOR TRRN2 (CURRENT SITE), 10/26/2009
USGS MAP OF TRUCKEE & TAHOE BASINS, http://smig.usgs.gov/SMIG/features_0497/ltfig01.gif
USGS PEAK FLOW DATA, 7/1/1906-9/30/2010
USGS RATING TABLE #29.1, TRUCKEE R @ RENO
USGS RENO NV 1:100,000 SCALE MAP 1980
USGS RENO NV 7.5 MINUTE QUADRANGLE 1967
USGS VERDI NV 7.5 MINUTE QUADRANGLE 1967
USGS VISTA NV 7.5 MINUTE QUADRANGE 1975/1982
USGS WATER RESOURCES DATA FOR NEVADA, 1906-2010

ABBREVIATIONS:

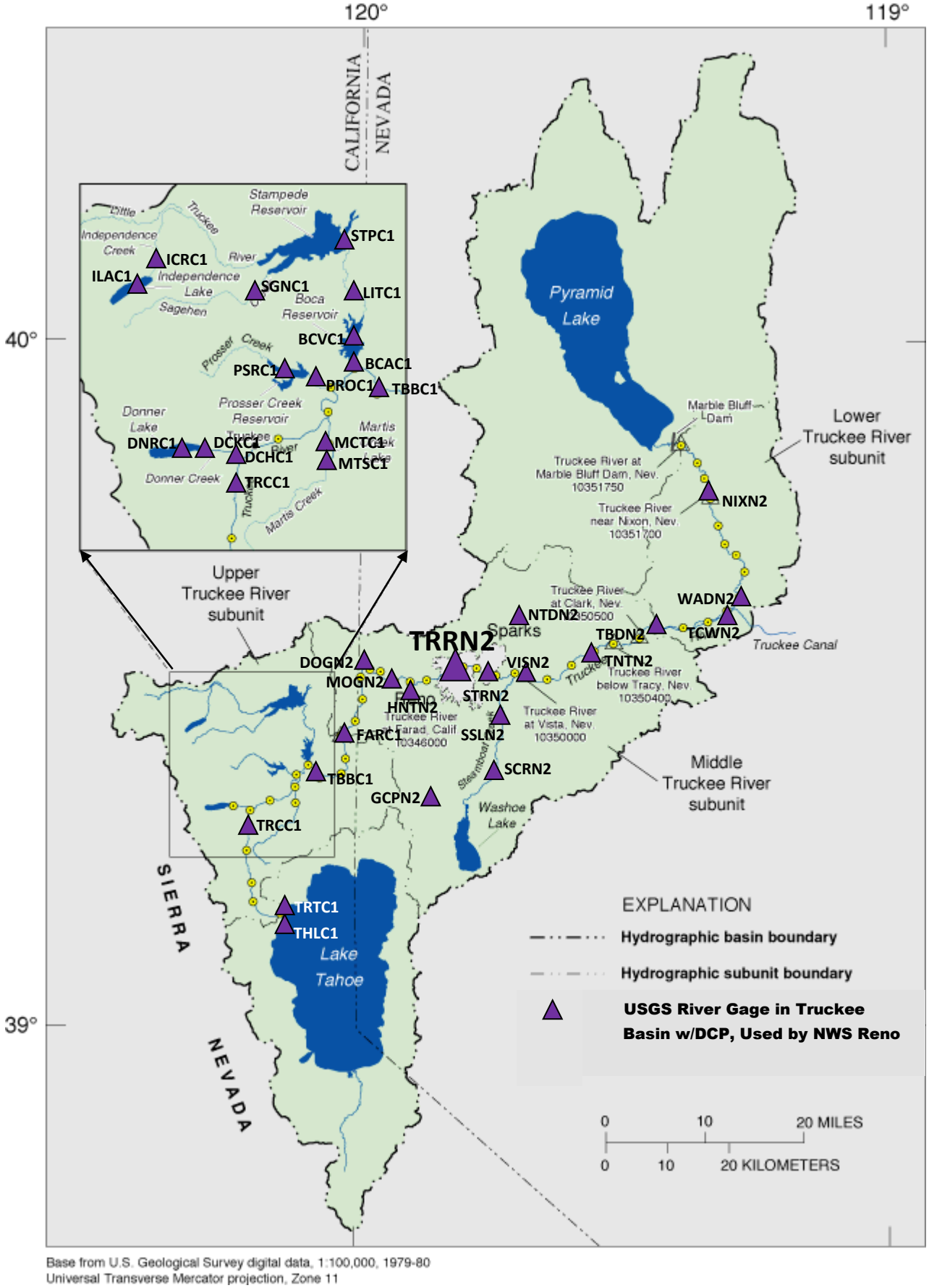
BM	- bench mark	EPA	- Environmental Protection Agency
DS	- downstream	IBWC	- International Boundary and Water Comm.
US	- upstream	MSRC	- Mississippi River Commission
HW	- high water	MORC	- Missouri River Commission
LW	- low water	NOAA	- National Oceanic and Atmospheric Admin.
RB	- right bank	NOS	- National Ocean Survey
LB	- left bank	NWS	- National Weather Service
MGL	- mean gulf level	TVA	- Tennessee Valley Authority
MLW	- mean low water	USACE	- U.S. Army Corps of Engineers
MSL	- mean sea level	USBR	- U.S. Bureau of Reclamation
MLT	- mean low tide	USGS	- U.S. Geological Survey
MT	- mean tide	USWB	- U.S. Weather Bureau
WQ	- water quality	NGVD	- National Geodetic Vertical Datum
RM	- reference mark	NAD	- North American Datum
RP	- reference point		

LOCATION IDENTIFICATION: TRRN2
NWS INDEX NUMBER:
USGS NUMBER: 10348000

MAP OF TRUCKEE & TAHOE BASINS...
Including other USGS River Gages, Lakes and Reservoirs in Truckee Basin

LATITUDE: 39 31 49 LONGITUDE: 119 47 40

Base Map Source: http://smig.usgs.gov/SMIG/features_0497/ltfig01.gif

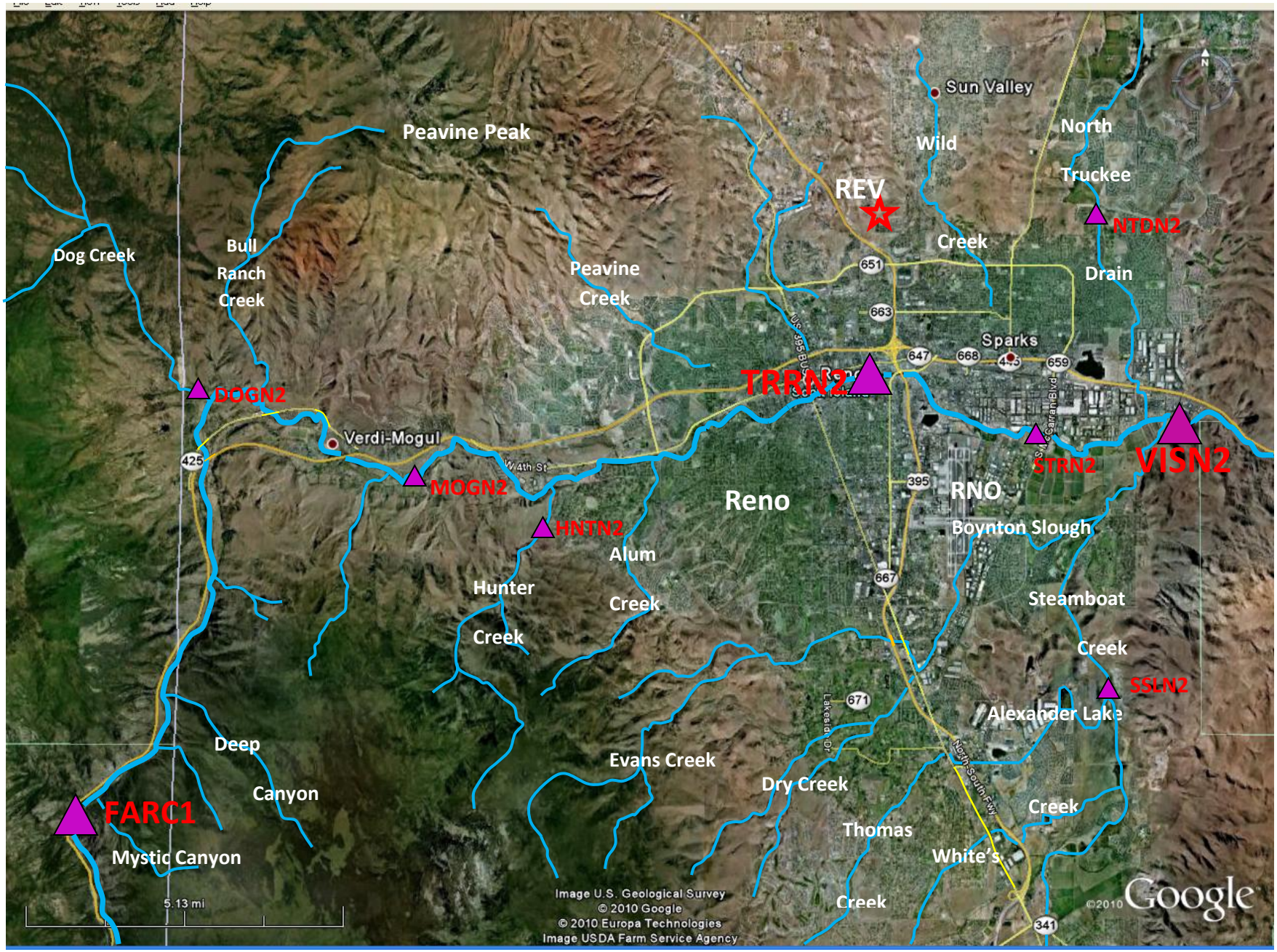


Base from U.S. Geological Survey digital data, 1:100,000, 1979-80
Universal Transverse Mercator projection, Zone 11

Truckee River at Reno NV (TRRN2) HSA: REV January 2011

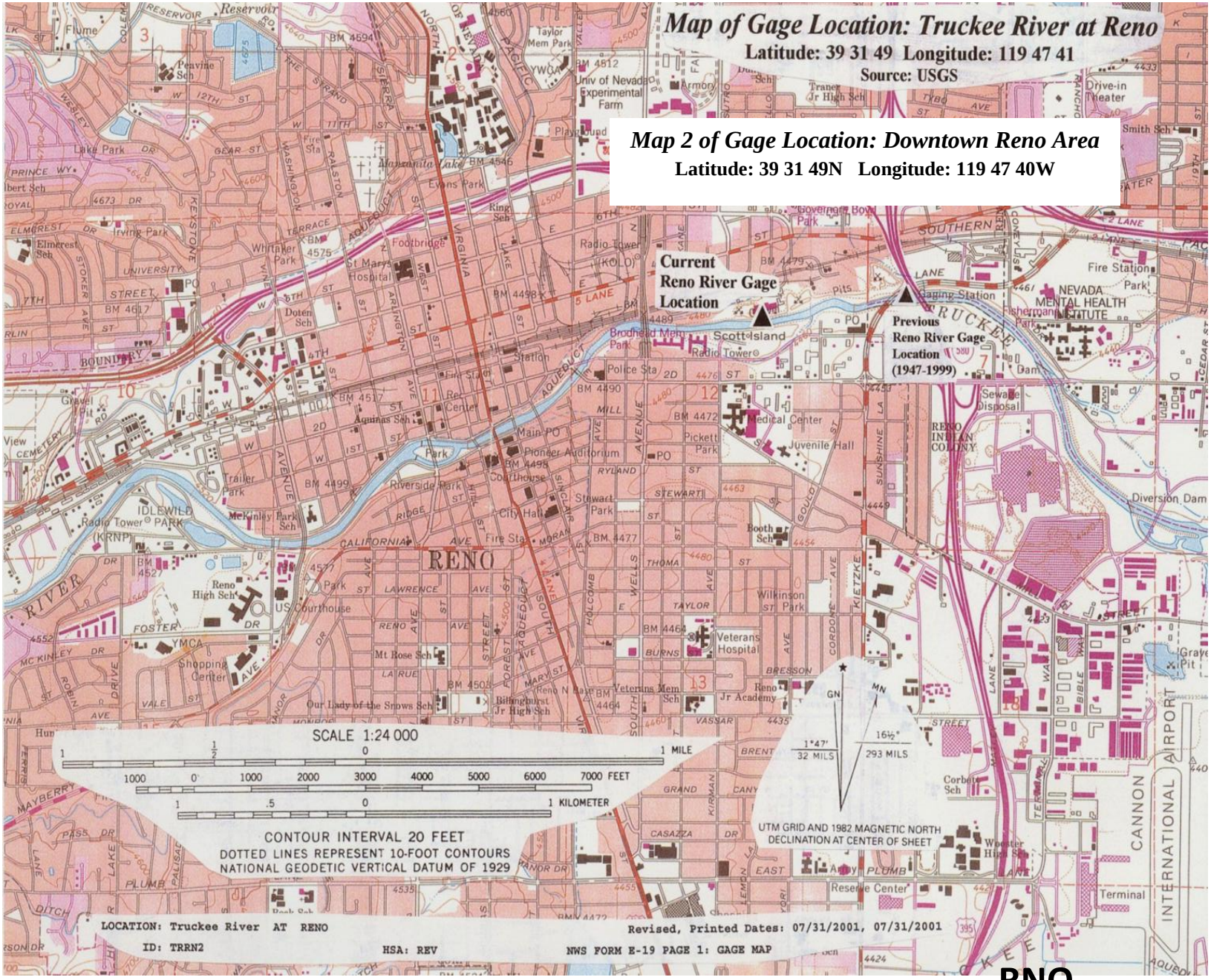
MAP 1 OF GAGE LOCATION...Satellite Image with Hydrographic Features

LATITUDE: 39 31 49 LONGITUDE: 119 47 40



Satellite image of Truckee River Basin from Farad (FARC1 nr CA/NV State Line) to Vista (VISN2) River Forecast Points

Truckee River at Reno NV (TRRN2) HSA: REV January 2011

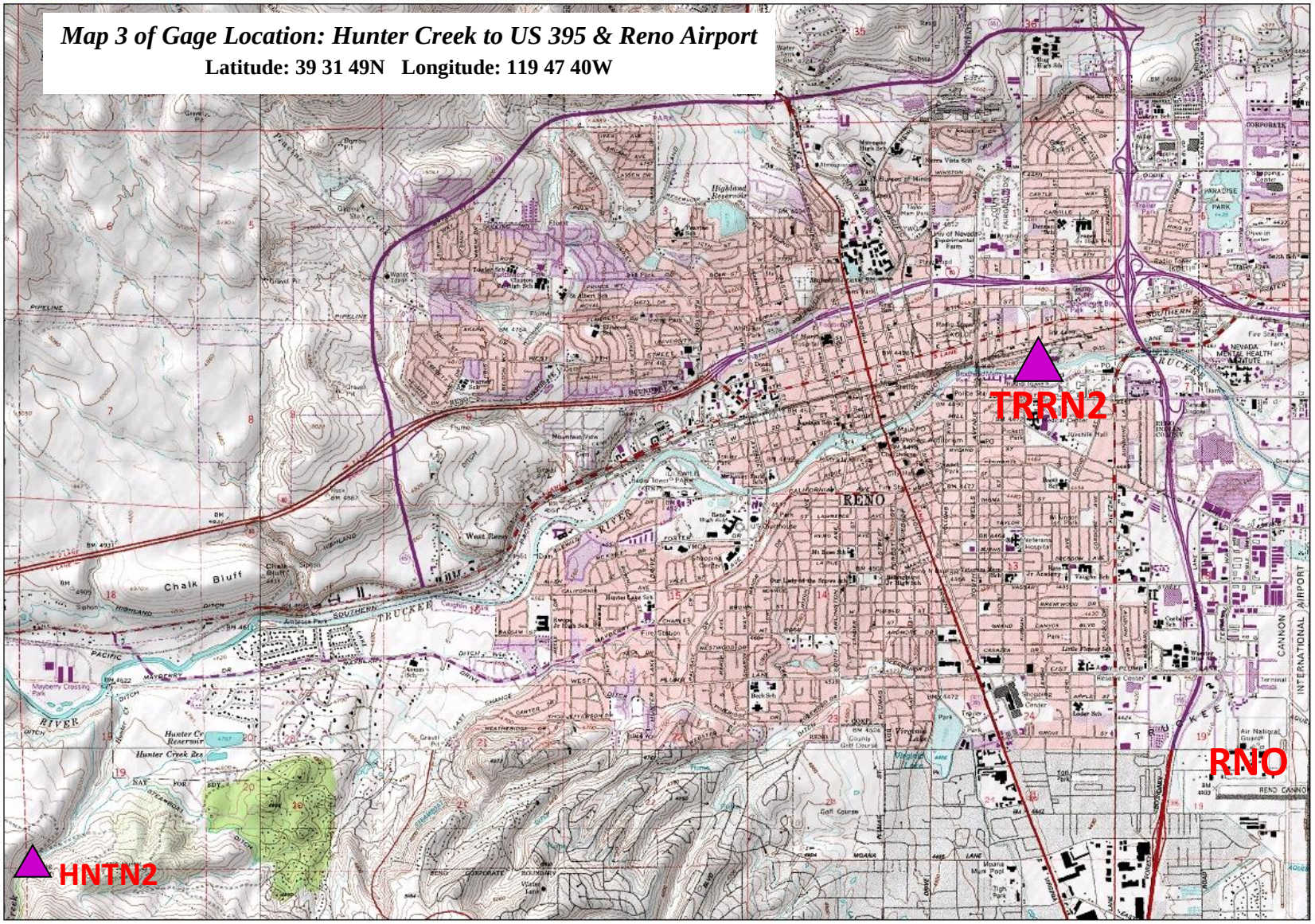

Map of Gage Location: Truckee River at Reno
Latitude: 39 31 49 Longitude: 119 47 41
Source: USGS
Map 2 of Gage Location: Downtown Reno Area
Latitude: 39 31 49N Longitude: 119 47 40W
Current Reno River Gage Location
Previous Reno River Gage Location (1947-1999)
RENO
SCALE 1:24 000
1 MILE
7000 FEET
1 KILOMETER
CONTOUR INTERVAL 20 FEET
DOTTED LINES REPRESENT 10-FOOT CONTOURS
NATIONAL GEODETIC VERTICAL DATUM OF 1929
UTM GRID AND 1982 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET
LOCATION: Truckee River AT RENO
ID: TRRN2
HSA: REV
Revised, Printed Dates: 07/31/2001, 07/31/2001
NWS FORM E-19 PAGE 1: GAGE MAP
RNO

DeLORME

XMap® 4.5

Map 3 of Gage Location: Hunter Creek to US 395 & Reno Airport

Latitude: 39 31 49N Longitude: 119 47 40W

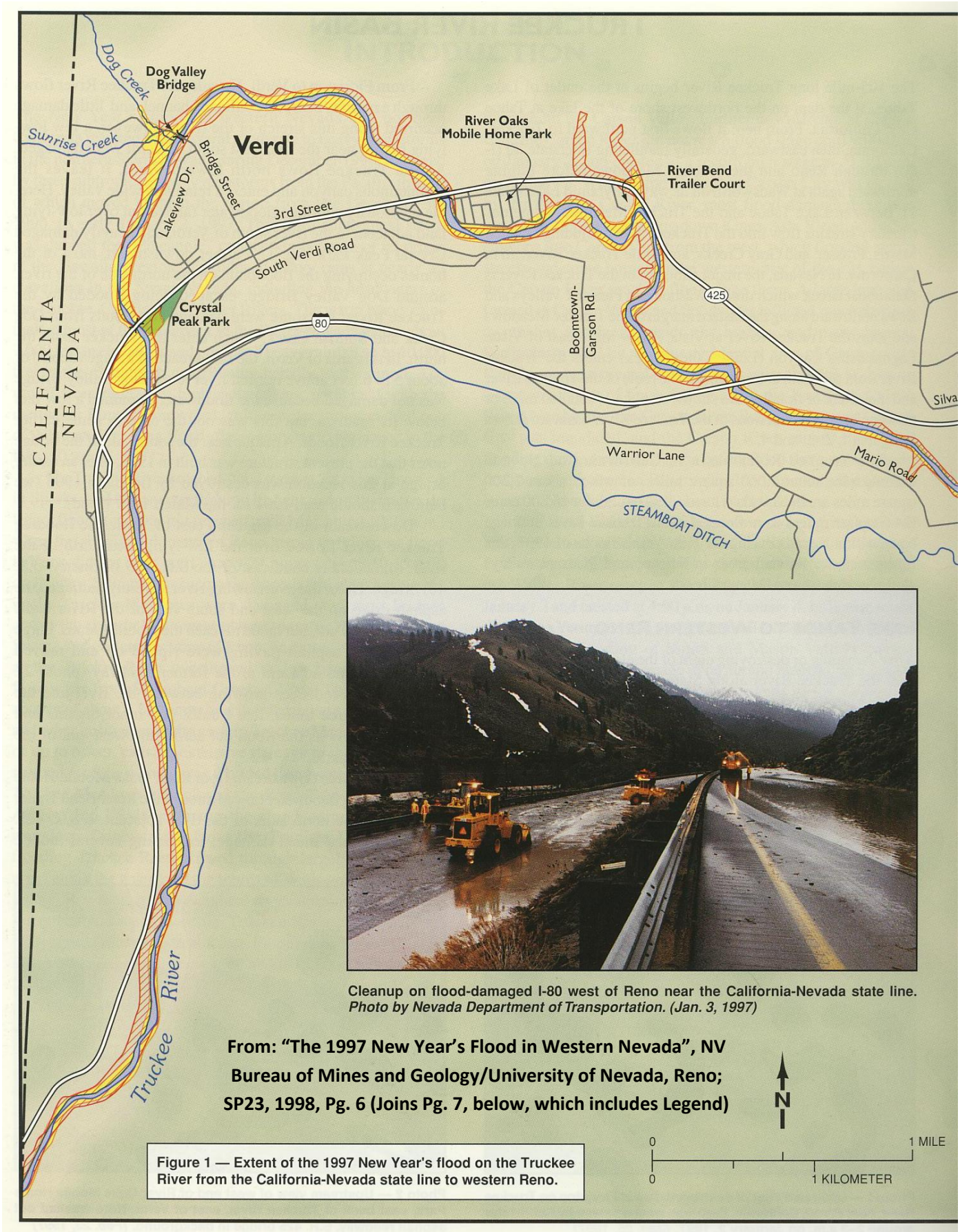


MN (0.0° W)

0 ¼ ½ ¾ 1 1¼ 1½ 1¾ mi

Data Zoom 12-0

Truckee River at Reno NV (TRRN2) HSA: REV January 2011

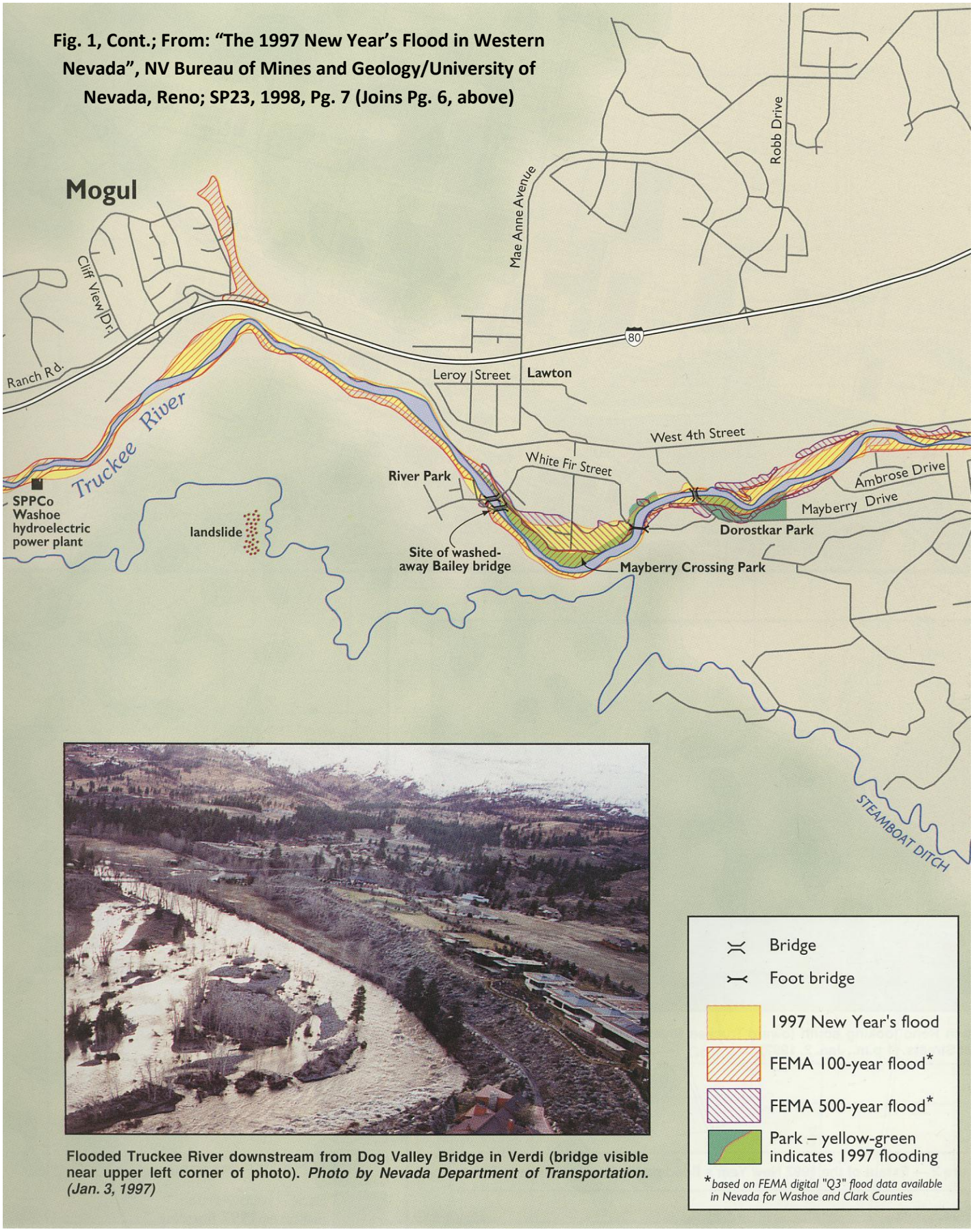


Cleanup on flood-damaged I-80 west of Reno near the California-Nevada state line. *Photo by Nevada Department of Transportation. (Jan. 3, 1997)*

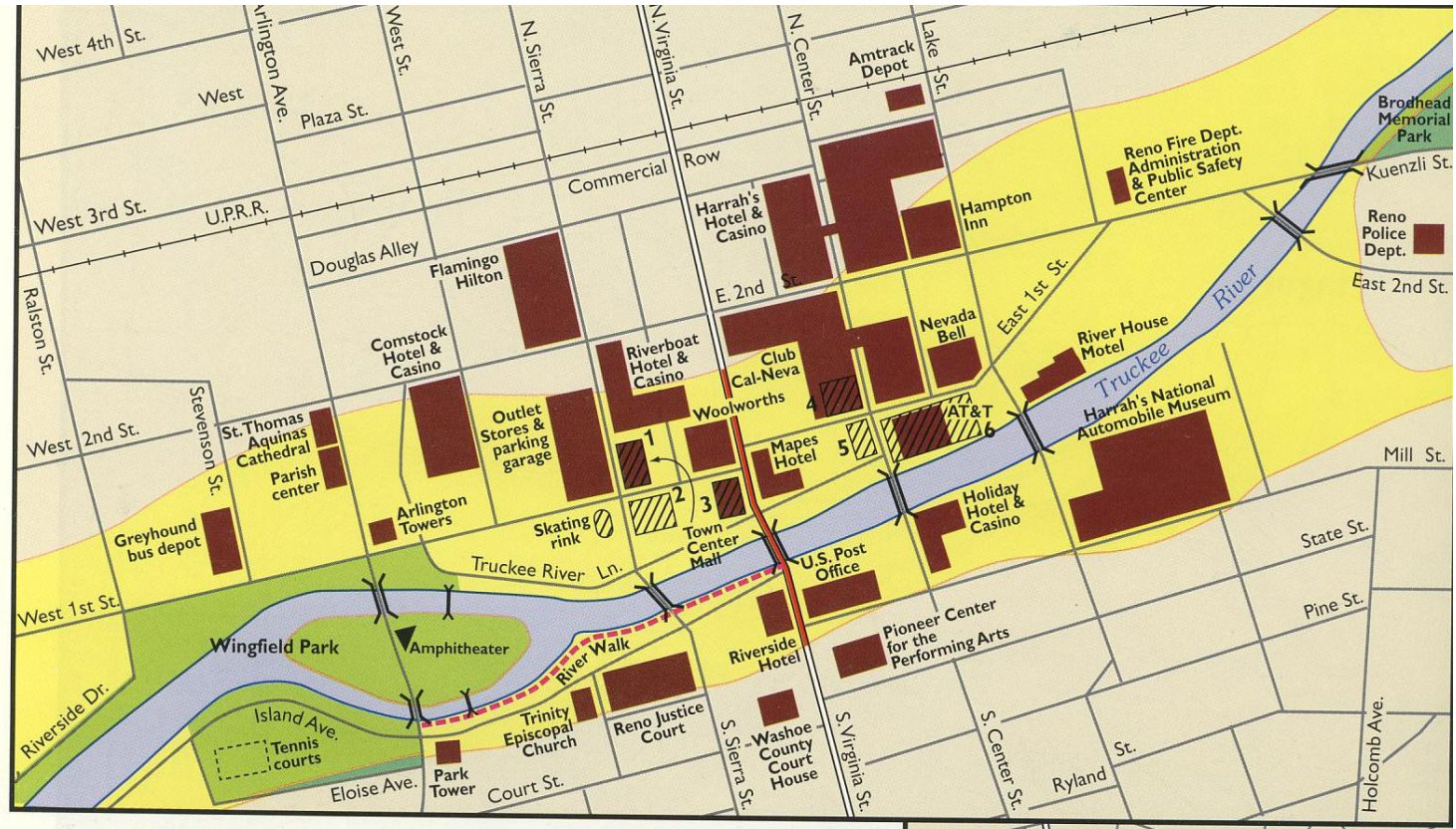
From: "The 1997 New Year's Flood in Western Nevada", NV Bureau of Mines and Geology/University of Nevada, Reno; SP23, 1998, Pg. 6 (Joins Pg. 7, below, which includes Legend)

Figure 1 — Extent of the 1997 New Year's flood on the Truckee River from the California-Nevada state line to western Reno.

Fig. 1, Cont.; From: "The 1997 New Year's Flood in Western Nevada", NV Bureau of Mines and Geology/University of Nevada, Reno; SP23, 1998, Pg. 7 (Joins Pg. 6, above)

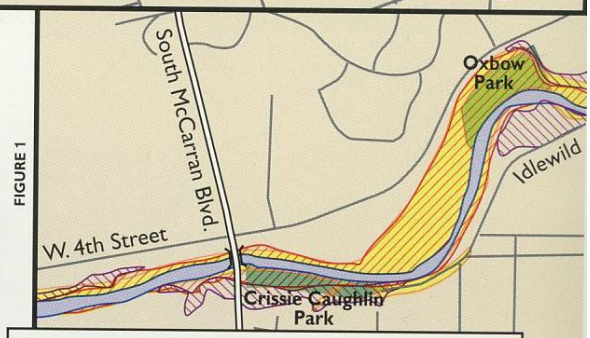


Flooded Truckee River downstream from Dog Valley Bridge in Verdi (bridge visible near upper left corner of photo). *Photo by Nevada Department of Transportation. (Jan. 3, 1997)*



Downtown Reno looking south toward Truckee River at intersection of Ralston and West 1st Streets. (1 p.m., Jan. 2, 1997)

FIGURE 1



Bridge
Foot bridge
Water over highway
Current structure
Site of previously existing structure
1 Gray Reid Wright Co.
2 Granada Theater
3 Nevada Bank of Commerce/ Masonic building
4 Old Reno City Hall
5 Majestic Theater
6 Reno Garage
1997 New Year's flood
FEMA 100-year flood*
FEMA 500-year flood*
Park – yellow-green indicates 1997 flooding
*based on FEMA digital "Q3" flood data available in Nevada for Washoe and Clark Counties

Figure 2 — Extent of the 1997 New Year's flood on the Truckee River in Reno.

From: "The 1997 New Year's Flood in Western Nevada", NV Bureau of Mines and Geology/University of Nevada, Reno; SP23, 1998, Pg. 8 (Joins Pg. 9, below)

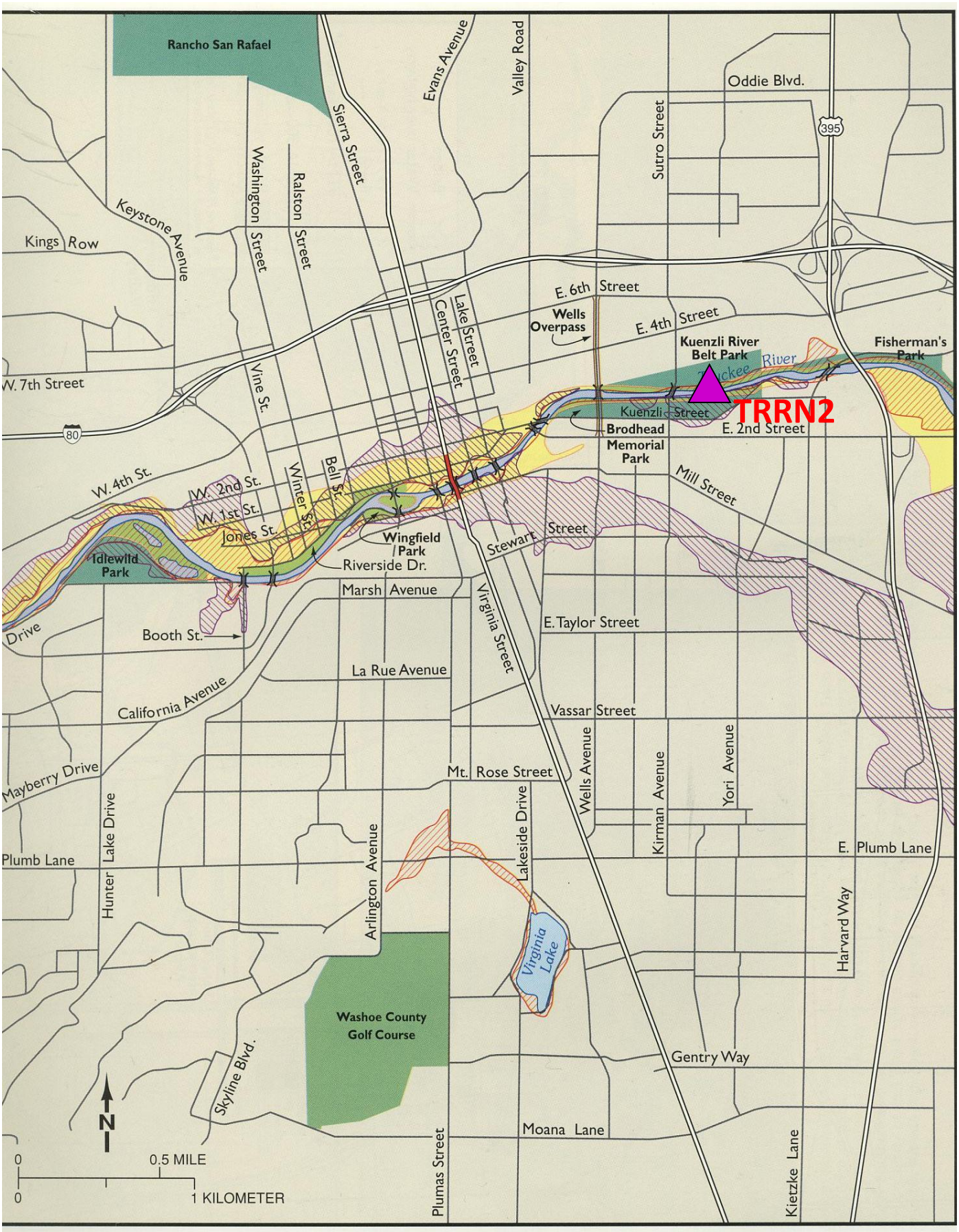


Fig. 2, Cont.; From: "The 1997 New Year's Flood in Western Nevada", NV Bureau of Mines and Geology/University of Nevada, Reno; SP23, 1998, Pg. 9 (See Pg. 8, above, for Legend).

BENCHMARKS

ELEVATION OF GAGE ZERO: 4444.530 VERTICAL DATUM: MSL
LEVELING AGENCY AND DATE: USGS CHECKBAR:
RATING AGENCY: USGS

BENCHMARK	DESCRIPTION	GAGE ZERO	DATUM
CSG1	UPPER CREST STAGE GAGE PIN ELEVATION. MOUNTED ON STREAMWARD SIDE OF COTTONWOOD TREE AT RIVER LEVEL AND SSW OF GAGE HOUSE. LEVELS OF 7/9/2009.	9.676	4454.206
CSG2	LOWER CREST STAGE GAGE PIN ELEVATION. ON BACK OF LOWER OSS MOUNTING BRACKET. LEVELS OF 7/9/2009.	5.720	4450.250
RM10	LAG BOLT @ BASE OF E SIDE OF UTILITY POLE 25 FT W OF GAGE HOUSE. LEVELS OF 7/9/2009.	21.258	4465.788
RM11	USGS BRASS TABLET IN LEFT BANK CABLEWAY ANCHOR BLOCK. LEVELS OF 7/9/2009.	23.974	4468.504
RM12	USGS BRASS TABLET IN SW CORNER OF GAGE HOUSE PAD. LEVELS OF 7/9/2009.	22.218	4466.748
RM9	HIGH POINT IN CHISELED SQUARE @ SE CORNER OF E END OF CONCRETE RETAINING WALL 150 FT W OF GAGE HOUSE. LEVELS OF 9/30/1998.	12.704	4457.234
RP1	LAG BOLT ON LOWER OUTSIDE STAFF. LEVELS OF 7/9/2009	5.846	4450.376
RP10	REBAR ROD LOCATED ABOUT 1 FT UPSTREAM OF ORIFICE PIPE. LEVELS OF 8/1/2000.	7.270	4451.800
RP11	STEEL FENCE POST LOCATED ABOUT 1 FT DS OF ORIFICE PIPE & ABOUT 3 FT STREAMWARD OF THE LAST BEND IN THE ORIFICE PIPE. LEVELS OF 8/1/2000.	10.835	4455.365
RP2	LAG BOLT ON UPPER OUTSIDE STAFF. LEVELS OF 7/9/2009.	11.748	4456.278
RP3	LAG BOLT @ BASE OF UPSTREAM SIDE OF THE DOWNSTREAM-MOST OF THREE COTTONWOOD TREES AT RIVER LEVEL AND SSW OF GAGE HOUSE. LEVELS OF 8/21/2006.	9.854	4454.384
RP4	LAG BOLT @ BASE OF SHOREWARD SIDE OF MIDDLE OF THREE COTTONWOOD TREES AT RIVER LEVEL & SSW OF GAGE HOUSE. LEVELS OF 8/21/2006.	11.530	4456.060
RP5	STEEL FENCE POST LOCATED NR (BUT NOT ATTACHED TO) THE END OF THE ORIFICE. LEVELS OF 9/30/1998. (DISCONTINUED AFTER SPRING 1999 WHEN IT WAS BENT OVER BY DEBRIS.)	7.000	4451.530
RP6	STEEL FENCE POST ANCHORING THE ORIFICE AND DS FROM LARGE BOULDER. LEVELS OF 8/1/2000.	6.452	4450.982
RP7	STEEL FENCE POST TO SHOREWARD OF LARGE BOULDER. LEVELS OF 8/1/2000.	10.780	4455.310
RP9	REBAR ROD LOCATED BETWEEN LARGE BOULDER & ORIFICE PIPE. LEVELS OF 7/9/2009.	5.953	4450.483

GAGES

DCP TELEM

NESS ID: 17B3904E TYPE OF TELEMETRY: LARC
OWNER: USGS OWNER: NWS
REPORT TIME: 00:17:50 PHONE NUMBER:
INTERVAL: 60 INTERVAL: 60
CRITERIA: Fed Water Master pays phone,
NWS maintains LARC.
PAYOR/COST OF LINE: Other / $

GAGE TYPE	OWNER	MAINTENANCE	BEGAN	ENDED	GAGE LOCATION/REMARKS
OS STAFF	USBR	USBR	07/01/1906	09/30/1946	0.6 MI. US OF CURRENT (2010) SITE @ DIFFERENT DATUM. NO INFORMATION ON RANGES.
ELEC TAPE	USGS	USGS	01/01/1947	07/30/1999	RECORDER AND LARC WERE REFERENCED TO THIS ET GAGE. IN GAGE HOUSE ON LB, 400' DS OF KIETZKE BRIDGE, BENEATH HWY 395 BRIDGE, AND ABOUT 2700' DS OF CURRENT (2010) LOCATION.
FLOAT	USGS	USGS	01/01/1947	07/30/1999	IN STILLING WELL ON LB, 400' DS OF KIETZKE BRIDGE, BENEATH HWY 395 BRIDGE AND ABOUT 2700' DS OF CURRENT (2010) LOCATION.
FSHR PORT	USGS	USGS	01/01/1947	07/30/1999	FP MODEL 1542 15 MIN. PUNCH; BACKUP TO CR10 DATALOGGER. IN GAGE HOUSE ON LB, 400' DS OF KIETZKE BRIDGE, BENEATH HWY 395 BRIDGE AND ABOUT 2700' DS OF PRESENT (2010) LOCATION.
IS STAFF	USGS	USGS	01/01/1947	07/30/1999	RANGE: 0.00' TO 10.14'. INSIDE STILLING WELL ON LB, 400' DS OF KIETZKE BRIDGE, BENEATH HWY 395 BRIDGE AND ABOUT 2700' DS OF PRESENT (2010) LOCATION.
OS STAFF	USGS	USGS	01/01/1947	07/30/1999	IN 2 SECTIONS ON LB, 400' DS OF KIETZKE BRIDGE, BENEATH HWY 395 BRIDGE, AND ABOUT 2700' DS OF PRESENT (2010) LOCATION. LWR SECTION FROM 1.94 TO 3.34' ON STREAMWARD (S) SIDE; UPR SECTION FROM 2.20 TO 10.10' ON BANKWARD (N) SIDE.
TELEMARK	NWS	NWS	03/30/1965	06/03/1982	IN GAGE HOUSE, ON LB, 400' DS OF KIETZKE BRIDGE, BENEATH HWY 395 BRIDGE, AND ABOUT 2700' DS OF PRESENT (2010) LOCATION.
BDT/DCD	NWS	NWS	06/03/1982	05/04/1989	IN GAGE HOUSE, ON LB, 400' DS OF KIETZKE BRIDGE, BENEATH HWY 395 BRIDGE, AND ABOUT 2700' DS OF PRESENT (2010) LOCATION.
CR-10	USGS	USGS	05/04/1989	07/30/1999	PRIMARY RECORDER WHILE INSTALLED; FP RECORDER WAS BACKUP. IN GAGE HOUSE ON LB, 400' DS FROM KIETZKE LANE BRIDGE, BENEATH HWY 395 BRIDGE AND APPROX. 2700' DS OF PRESENT (2010) LOCATION.
LARC	NWS	NWS	05/04/1989	04/19/2001	HANDAR MODEL 550A HYDROLOGGER W/HANDAR MODEL 536A SHAFT ENCODER. IN GAGE HOUSE ON LB, 400' DS OF KIETZKE BRIDGE, BENEATH HWY 395 BRIDGE, AND ABOUT 2700' DS OF PRESENT (2010) LOCATION.
CREST STAG	USGS	USGS	10/01/1998		UPPER: ON STREAMWARD SIDE OF COTTONWOOD TREE SSW OF GAGE HOUSE. LOWER: BACK OF OSS MOUNTING BRACKET. ON LB, ADJACENT TO SCOTT ISLAND, 700' DS FROM KIRMAN AVE. BR, 0.4 MI. US FROM KIETZKE LN BR.
DCP	USGS	USGS	10/01/1998		SUTRON 8210 DATALOGGER & DCP IN GAGE HOUSE; INTERFACED WITH PS2 & NWS LARC; CONNECTED TO CHANNEL BY ORIFICE LINE. LOGS DATA @ 15 MIN. INTERVALS. ON LB, ADJACENT TO SCOTT ISLAND, 700' DS FROM KIRMAN AVE. BR, 0.4 MI. US FROM KIETZKE LN BR.
LARC	NWS	NWS	10/01/1998		INTERFACED W/USGS SUTRON DCP & PS2; WATERMASTER PAYS PHONE CHARGES. ON LB, ADJACENT TO SCOTT ISLAND, 700' DS FROM KIRMAN AVE. BR, 0.4 MI. US FROM KIETZKE LN BR.
OS STAFF	USGS	USGS	10/01/1998		TWO OS STAFFS: #1 NR SHORE @ ORIFICE PIPE, RANGE: 3.3'-9.4'; #2 ON COTTONWOOD TREE, RANGE: 8.9-16.9'. ON LB, ADJACENT TO SCOTT ISLAND, 700' DS FROM KIRMAN AVE. BR, 0.4 MI. US FROM KIETZKE LN BR.
PS2	USGS	USGS	10/01/1998		PRESSURE TRANSDUCER TO SENSE STAGE IN CHANNEL VIA ORIFICE LINE; INTERFACED W/SUTRON 8210 DCP, NWS LARC. IN GAGE HOUSE ON LB, ADJACENT TO SCOTT ISLAND, 700' DS FROM KIRMAN AVE. BR, 0.4 MI. US FROM KIETZKE LN BR.

HISTORY

PUBLICATION/LOCATION OF RECORDS	STARTING DATE	ENDING DATE
USDA TKE R BSN FLD CHRON.	01/01/1861	12/31/1976
USGS PEAK FLOW DATA	07/01/1906	09/30/2000
NOV-DEC 50 FLDS IN W NV	11/01/1950	01/01/1951
USGS FLOOD FREQ. ANALYSIS	10/01/1969	09/30/1997
USDA:H2O RSCRS, LHNTN BSN	07/01/1975	01/01/2050
NV BMG 97 FLOOD, W NV	05/01/1998	01/01/2050
COE:TKE MDWS INFO PAPER	04/01/2000	01/01/2050
USGS STAT. DESC. TRRN2	10/26/2009	04/25/2007

TYPE OF GAGE	OWNER	STARTING DATE	ENDING DATE
OS STAFF	USBR	07/01/1906	09/30/1946
ELEC TAPE	USGS	01/01/1947	07/30/1999
FLOAT	USGS	01/01/1947	07/30/1999
FSHR PORT	USGS	01/01/1947	07/30/1999
IS STAFF	USGS	01/01/1947	07/30/1999
OS STAFF	USGS	01/01/1947	07/30/1999
TELEMARK	NWS	03/30/1965	06/03/1982
BDT/DCD	NWS	06/03/1982	05/04/1989
CR-10	USGS	05/04/1989	07/30/1999
LARC	NWS	05/04/1989	04/19/2001
CREST STAG	USGS	10/01/1998	
DCP	USGS	10/01/1998	
LARC	NWS	10/01/1998	
OS STAFF	USGS	10/01/1998	
PS2	USGS	10/01/1998	

ZERO ELEVATION	STARTING DATE
4431.970	01/01/1947
4444.530	10/01/1998

CRESTS*

FLOOD STAGE: 11.00 ACTION STAGE: 9.00 BANKFULL STAGE: 11.00
FLOOD FLOW: 10600 ACTION FLOW: 4890

DATE OF CREST	TIME LST	CREST (ft)	FLOW (CFS)	FROM HIGH WATERMARKS	BASED ON OLD DATUM	CAUSED BY ICE JAM	REMARKS
03/18/1907	UNDEF	12.73	14600				ACTUAL CREST STAGE @ OLD DATUM NA; CREST OBTAINED USING RATING #29.1 (1/24/2011).
01/16/1909	UNDEF	10.30	8540				ACTUAL CREST STAGE @ OLD DATUM NA; CREST OBTAINED USING RATING #29.1 (1/24/2011).
04/26/1911	UNDEF	9.46	6060				ACTUAL CREST STAGE @ OLD DATUM NA; CREST OBTAINED USING RATING #29.1 (1/24/2011).
12/31/1913	UNDEF	9.96	7520				ACTUAL CREST STAGE @ OLD DATUM NA; CREST OBTAINED USING RATING #29.1 (1/24/2011).
04/11/1916	UNDEF	9.05	5020				ACTUAL CREST STAGE @ OLD DATUM NA; CREST OBTAINED USING RATING #29.1 (1/24/2011).
01/21/1943	UNDEF	9.59	6420				DAILY AVG FLOW, CREST NA. USED RATING #29.1 (1/24/2011) TO OBTAIN CREST GIVEN.
11/21/1950	UNDEF	14.57	19900				CREST @ OLD DATUM 13.83'; USED RATING #29.1 (1/24/2011) TO OBTAIN CREST GIVEN.
05/03/1952	UNDEF	10.11	7950				CREST @ OLD DATUM 9.38'; USED RATING #29.1 (1/24/2011) TO OBTAIN CREST GIVEN.
12/23/1955	UNDEF	14.83	20800				CREST @ OLD DATUM 13.63'; USED RATING #29.1 (1/24/2011) TO OBTAIN CREST GIVEN.
05/20/1958	UNDEF	9.47	6090				CREST @ OLD DATUM 8.10'; USED RATING #29.1 (1/24/2011) TO OBTAIN CREST GIVEN.
02/01/1963	UNDEF	14.10	18400				CREST @ OLD DATUM 13.28'; USED RATING #29.1 (1/24/2011) TO OBTAIN CREST GIVEN.
12/23/1964	UNDEF	11.35	11300				CREST @ OLD DATUM 11.45'; USED RATING #29.1 (1/24/2011) TO OBTAIN CREST GIVEN.
05/22/1967	UNDEF	9.71	6800				CREST @ OLD DATUM 8.89'; USED RATING #29.1 (1/24/2011) TO OBTAIN CREST GIVEN.
05/13/1969	UNDEF	9.22	5420				CREST @ OLD DATUM 8.01'; USED RATING #29.1 (1/24/2011) TO OBTAIN CREST GIVEN.
01/22/1970	UNDEF	9.92	7400				CREST @ OLD DATUM 9.25'; USED RATING #29.1 (1/24/2011) TO OBTAIN CREST GIVEN.
01/14/1980	UNDEF	10.33	8630				CREST @ OLD DATUM 9.79'; USED RATING #29.1 (1/24/2011) TO OBTAIN CREST GIVEN.
12/20/1981	UNDEF	10.35	8690				CREST @ OLD DATUM 10.00'; USED RATING #29.1 (1/24/2011) TO OBTAIN CREST GIVEN.
03/13/1983	UNDEF	9.86	7230				CREST @ OLD DATUM 9.28'; USED RATING #29.1 (1/24/2011) TO OBTAIN CREST GIVEN.
11/24/1983	UNDEF	9.75	6920				CREST @ OLD DATUM 8.90'; USED RATING #29.1 (1/24/2011) TO OBTAIN CREST GIVEN.
02/17/1986	UNDEF	12.65	14400				CREST @ OLD DATUM 12.58'; USED RATING #29.1 (1/24/2011) TO OBTAIN CREST GIVEN.
03/10/1995	UNDEF	9.58	6390				CREST @ OLD DATUM 8.86'; USED RATING #29.1 (1/24/2011) TO OBTAIN CREST GIVEN.
05/18/1996	UNDEF	9.94	7460				CREST @ OLD DATUM 9.48'; USED RATING #29.1 (1/24/2011) TO OBTAIN CREST GIVEN.
01/02/1997	UNDEF	14.02	18200				CREST @ OLD DATUM 14.94'; USED RATING #29.1 (1/24/2011) TO OBTAIN CREST GIVEN.
03/24/1998	UNDEF	9.26	5540				CREST @ OLD DATUM 8.41'; USED RATING #29.1 (12/8/2010) TO OBTAIN CREST GIVEN.
12/31/2005	UNDEF	13.38	16400				Actual measured crest.

*NOTE: All crest stages listed are instantaneous and were converted from instantaneous crest flows using USGS Rating Number 29.1, in use 1/24/2011 (put into use 10/1/2009). Actual measured crests, if available, are noted in remarks**.** Only annual crests above 5000 cfs are included.

LOW WATER RECORDS*

DATE OF LOW WATER	STAGE (ft)	FLOW (CFS)	REMARKS
07/02/1912	1.90	18	7/2-3/1912; Stg est w/USGS Rtg 29.1 (1/24/2011)
07/01/1913	1.93	19	7/1-2/1913; Stg est w/USGS Rtg 29.1 (1/24/2011)
09/02/1925	1.78	14	9/2-3/1925; Stg est w/USGS Rtg 29.1 (1/24/2011)
09/12/1926	1.38	0	0 flow 9/12,14-24,26-30,1926. Stg fm Rtg 29.1
08/11/1931	1.45	3	8/11,27-29/1931; Stg est. w/USGS Rtg 29.1
10/31/1932	1.90	18	Stage est. w/USGS Rtg 29.1 (1/24/2011)
09/07/1933	1.87	17	9/7,15-16,21-22,24-27/1933;Stg est w/Rtg 29.1
09/23/1977	1.96	20	Stage est. w/USGS Rtg 29.1 (1/24/2011)
10/18/1977	1.81	15	Also 10/19/77; Stg est w/USGS Rtg 29.1
09/22/1988	1.87	17	Stage est. w/USGS Rtg 29.1 (1/24/2011)
10/20/1988	1.81	15	Stage est. w/USGS Rtg 29.1 (1/24/2011)
09/23/1990	1.72	12	Stg. est w/USGS Rtg 29.1 (1/24/2011)
09/19/1991	1.87	17	Also 9/20, 21/1991; Stg est w/USGS Rtg 29.1
08/19/1992	1.66	10	Also 9/6,11/1992; Stg est w/USGS Rtg 29.1.
10/15/1992	1.64	9	9.3cfs; Stg est w/USGS Rtg 29.1 (1/24/2011)
09/21/1994	1.54	6	Stage est. w/USGS Rtg 29.1 (1/24/2011)
10/03/1994	1.98	21	Stage est. w/USGS Rtg 29.1 (1/24/2011)
10/12/2004	2.06	24	Stage est. w/USGS Rtg 29.1 (1/24/2011)

*NOTE: All stages listed were converted from low water flows using USGS Rating Number 29.1, in use 1/24/2011 (put into use 10/1/2009). Flows are daily averages. Only annual daily minimum low flows below 24 cfs are included.

CONDITIONS AFFECTING FLOW

MILES ABOVE MOUTH: 59.5 DRAINAGE AREA: 1067.0 POOL STAGE:

STREAM BED: GRAVEL, COBBLES, AND SMALL TO LARGE BOULDERS.

REACH: DOG VALLEY CREEK NEAR VERDI TO U.S. HWY 395 AT RENO.

REGULATION: LAKE TAHOE, DONNER, INDEPENDENCE, PROSSER, BOCA, STAMPEDE & MARTIS LAKES; SEVERAL POWER PLANTS. COMBINED USABLE CAPACITY OF THESE LAKES ~1,073,000 AF. USGS EST RENO PEAK FLOW 1/2/1997 WOULD HAVE BEEN ~42,500 CFS WITHOUT RESERVOIRS. ACTUAL WAS 18,200 CFS.

DIVERSION: MANY ABOVE STATION FOR IRRIGATION, POWER & MUNICIPAL USE.

WINTER: CHANNEL MODERATELY SUSCEPTIBLE TO ICE FORMATION DURING EXCEPTIONALLY COLD WINTER WEATHER (MAX AIR TEMP <45; MIN <20).

TOPOGRAPHY: STRAIGHT STABLE SINGLE CHANNEL ALL STAGES. MODERATE GRADIENT, ~100 FT WIDE. CHANNEL IS CONTROL. BANKS ~15 FT HIGH, VERY STEEP ABV ~10' STAGE. COVERED W/BOULDER/COBBLE RIP RAP. SOME COTTONWOOD TREES, WILLOWS AT EDGE OF CHANNEL @ BOTTOM OF BANKS.

REMARKS: ALL STAGES IN THIS REPORT OBTAINED BY CONVERTING FLOW TO STAGE USING USGS RATING #29.1 (IN USE 1/24/2011). LOW FLOW RECORDS ARE DAILY AVERAGES.

DAMAGE

STAGE	AREAS AFFECTED
9.00	Monitor Stage...No flooding from Mogul to U.S. Hwy 395...including downtown Reno. Lowest meadows and agricultural areas below U.S. Hwy 395 begin to flood. Near 5000 CFS...about a one in four chance of this much flow occurring any year per USGS estimates.
9.50	No flooding from Mogul to US Hwy 395, including Reno. This is maximum safe channel capacity in Truckee Meadows below U.S. Hwy 395...about 6000 CFS. Releases from Prosser, Stampede and Boca Reservoirs are cut by U.S. Watermaster to maintain less than 6200 CFS at Reno. About a one in five chance of this much flow occurring in any year per USGS estimates.
10.00	Very high flows, but no flooding from Mogul to U.S. Hwy 395...including downtown Reno. Downstream, Grand Sierra Resort RV Park...Truckee River Bike Path and parks along river begin to flood. Near 7600 CFS...about a one in eight chance of this much flow occurring in any year per USGS estimates.
10.50	Highest safe flow from Mogul to U.S. Hwy 395..including downtown Reno. About 9200 CFS. Downstream of US 395...Grand Sierra Resort RV Park, Truckee Bike Path, parks and industrial area in Sparks along river flood. About a one in ten chance of this much flow occurring in any year per USGS estimates.
11.00	Flood Stage...near bankfull from Mogul to US Hwy 395...including downtown Reno. Some minor flooding of lowlands...parks and trails along river. In downtown Reno...Wingfield Park begins to flood and water begins to go over Arlington Street bridge. Near 10600 CFS...about a one in 12 chance of this much flow occurring any year per USGS estimates.
11.50	Minor flooding from Mogul to US Hwy 395...including downtown Reno. River slightly out of banks with minor flooding of lowlands...parks and trails along river between Mogul and Reno. Idlewild Park begins to flood...Wingfield park flooded as much as a foot deep. River banks are slightly overtopped in downtown Reno...water is flowing over Arlington Street bridge slightly. Minor transportation impacts. At 11700 CFS...about a one in 15 chance of occurring any year per USGS estimates.
12.00	Moderate flooding from Mogul to US Hwy 395...including downtown Reno. River banks overtopped a few inches in downtown Reno. Idlewild and Wingfield Parks flood 2 to 3 feet deep. River Oaks and River Bend trailer parks above Mogul...and Mayberry Crossing...Dorostkar...Crissie Caughlin and Oxbow Parks west of Reno are flooded. Moderate impacts to roads and bridges...but most bridges still open. Arlington Avenue closed. Near 13000 CFS...about a one in 20 chance of occurring any year per USGS estimates.
12.50	Moderate flooding from Mogul to Hwy 395, including downtown Reno. River out of banks downtown nearly a foot. Idlewild and Wingfield Parks flood up to 5 ft deep. Significant impacts to roads and many bridges over the river begin to flood. Many Truckee River bridges closed; I80, US 395, Keystone and Wells bridges are open. Flooding begins to affect Reno Airport. Phone, power and water begins to be affected in Reno area. Near 14000 cfs, about a one in 22 chance of occurring per USGS estimates.
13.00	Major flooding with serious damage from Mogul to US Hwy 395. Downtown Reno and airport begin to have serious flooding, from 1 to 2 ft deep. Transportation severely impacted, many roads and bridges flood. Only I80, Keystone, Wells and US Hwy 395 bridges open. Downtown Reno flooded from 1st St. on north to Island Ave. and Riverwalk on south. Idlewild and Wingfield Parks flooded about 6 ft deep. At near 15500 cfs, about a one in 25 chance of occurring any year per USGS estimates
13.50	Extensive damage to property and infrastructure from Mogul to Reno. Flooding in downtown Reno and airport from 2 to 3 feet deep. Downtown Reno flooded from between 1st and 2nd Streets on north to Island Ave. and Court/Mill Streets on south. CalNeva Casino, bus depot, riverwalk, Arlington Towers, courthouse, Post Office, and many stores/shops flood. Idlewild and Wingfield Parks flood up to 8 ft. deep. Only I80, US 395, Keystone and Wells Ave bridges open. 16700 cfs; a 1 in 30 yr chance any year per USGS.
14.00	Flood disaster Mogul to Reno; extensive property/infrastructure damage. Reno airport and downtown flooded 4 ft. deep. Downtown Reno floods 2nd St north to Court/Mill south. Casinos, hotels, stores, post office, courthouse, phone building, bus depot, churches, museums and parks flood. Sewer lines on bridges may be severed. Idlewild and Wingfield Parks flooded 9-10 ft deep. Truckee bridges closed except I80, Keystone, Wells and US Hwy 395. About 18100 cfs, chance any year about 1 in 40 per USGS estimate.
14.50	Near record flood with extensive damage to property and infrastructure in floodplain from Mogul to Reno. Reno airport and downtown flooded up to 5 ft. deep. Power, phone, transportation, water and hospital services may be disrupted. All bridges over Truckee closed except I80, Keystone, Wells and US Hwy 395. Reno downtown flooded from between 2nd and 3rd on north to Court and Mill on south. At 19700 cfs, about a 1 in 45 chance of occurring any year per USGS estimates.
15.00	Record catastrophic flooding from Mogul to Reno. Property and infrastructure in floodplain sustain heavy damage throughout region. Reno airport and downtown under about 6 ft of water. Transportation, power, phone, water and hospital services disrupted through region. Only 180, Keystone, Wells and Hwy 395 bridges open. Downtown Reno flooded from 3rd St on north to Court/Mill Streets on south. Near 21400 cfs, exceeds record 12/23/1955 flood. Odds of occurring any year about 1 in 55 per USGS estimate.

RIVER STAGE DATA

	17-		
	16-		
15.00 - Record catastrophic flooding from Mogul to Reno. Property and infrastructure in floodplain sustain heavy damage throughout region. Reno airport and downtown under about 6 ft of water. Transportation, power, phone, water and hospital services disrupted through region. Only 180, Keystone, Wells and Hwy 395 bridges open. Downtown Reno flooded from 3rd St on north to Court/Mill Streets on south. Near 21400 cfs, exceeds record 12/23/1955 flood. Odds of occurring any year about 1 in 55 per USGS estimate.	15-	14.83	12/23/1955
		14.57	11/21/1950
	14-	14.10	02/01/1963
		14.02	01/02/1997
14.50 - Near record flood with extensive damage to property and infrastructure in floodplain from Mogul to Reno. Reno airport and downtown flooded up to 5 ft. deep. Power, phone, transportation, water and hospital services may be disrupted. All bridges over Truckee closed except I80, Keystone, Wells and US Hwy 395. Reno downtown flooded from between 2nd and 3rd on north to Court and Mill on south. At 19700 cfs, about a 1 in 45 chance of occurring any year per USGS estimates.		13.38	12/31/2005
	13-		
		12.73	03/18/1907
14.00 - Flood disaster Mogul to Reno; extensive property/infrastructure damage. Reno airport and downtown flooded 4 ft. deep. Downtown Reno floods 2nd St north to Court/Mill south. Casinos, hotels, stores, post office, courthouse, phone building, bus depot, churches, museums and parks flood. Sewer lines on bridges may be severed. Idlewild and Wingfield Parks flooded 9-10 ft deep. Truckee bridges closed except I80, Keystone, Wells and US Hwy 395. About 18100 cfs, chance any year about 1 in 40 per USGS estimate.	12-		
		11.35	12/23/1964
13.50 - Extensive damage to property and infrastructure from Mogul to Reno. Flooding in downtown Reno and airport from 2 to 3 feet deep. Downtown Reno flooded from between 1st and 2nd Streets on north to Island Ave. and Court/Mill Streets on south. CalNeva Casino, bus depot, riverwalk, Arlington Towers, courthouse, Post Office, and many stores/shops flood. Idlewild and Wingfield Parks flood up to 8 ft. deep. Only I80, US 395, Keystone and Wells Ave bridges open. 16700 cfs; a 1 in 30 yr chance any year per USGS.	11-		
		10.35	12/20/1981
	10-	10.11	05/03/1952
		9.96	12/31/1913
13.00 - Major flooding with serious damage from Mogul to US Hwy 395. Downtown Reno and airport begin to have serious flooding, from 1 to 2 ft deep. Transportation severely impacted, many roads and bridges flood. Only I80, Keystone, Wells and US Hwy 395 bridges open. Downtown Reno flooded from 1st St. on north to Island Ave. and Riverwalk on south. Idlewild and Wingfield Parks flooded about 6 ft deep. At near 15500 cfs, about a one in 25 chance of occurring any year per USGS estimates		9.75	11/24/1983
		9.59	01/21/1943
		9.26	03/24/1998
	9-	9.05	04/11/1916
12.50 - Moderate flooding from Mogul to Hwy 395, including downtown Reno. River out of banks downtown nearly a foot. Idlewild and Wingfield Parks flood up to 5 ft deep. Significant impacts to roads and many bridges over the river begin to flood. Many Truckee River bridges closed; I80, US 395, Keystone and Wells bridges are open. Flooding begins to affect Reno Airport. Phone, power and water begins to be affected 'in Reno area. Near 14000 cfs, about a one in 22 chance of occurring per USGS estimates.			
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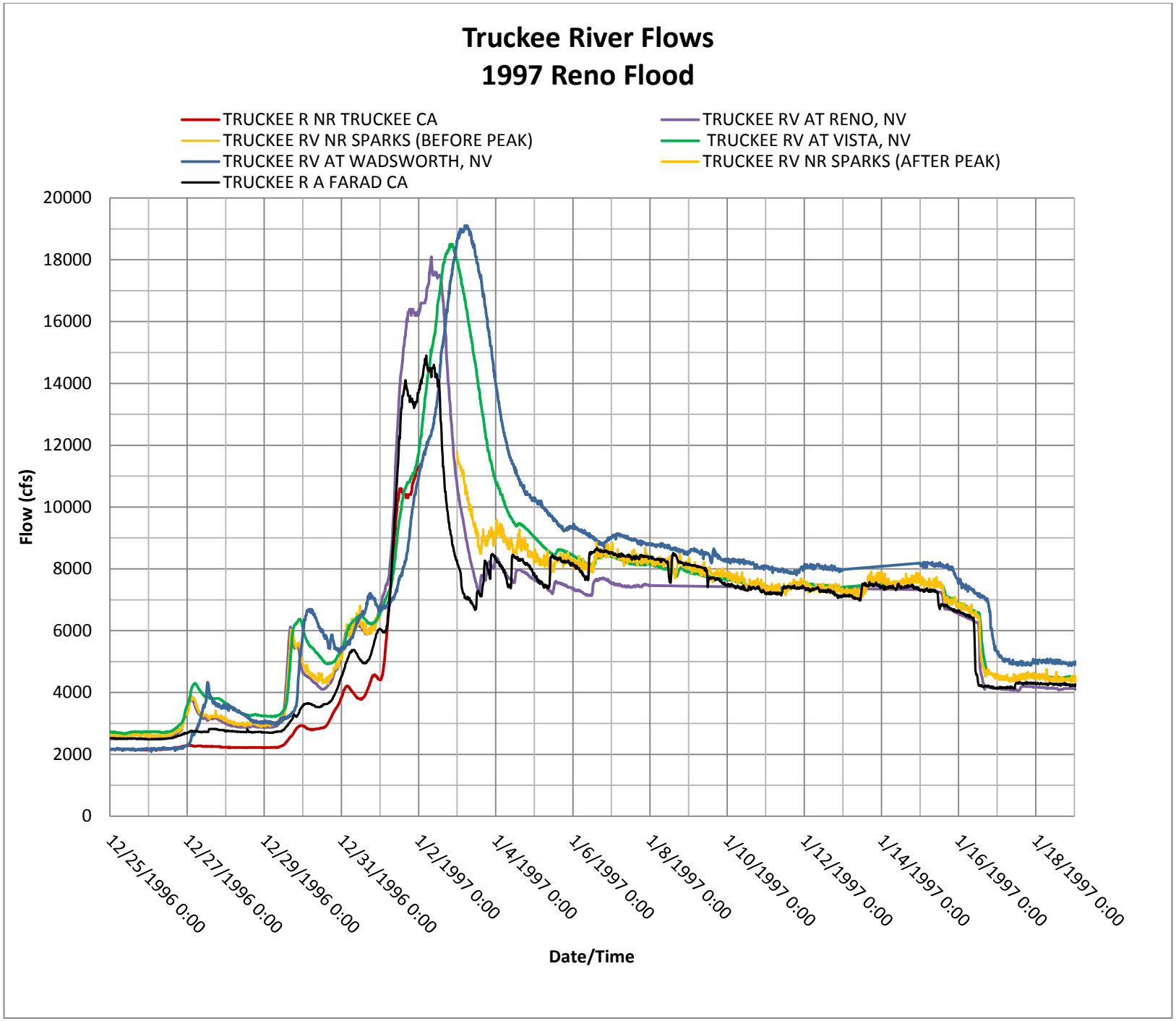
REACH: DOG VALLEY CREEK NEAR VERDI TO U.S. HWY 395 AT RENO. ELEVATION ZERO: 4444.53

CONTACTS

SQ	CONTACT/REMARKS	PHONE
1	USGS Carson City snberris@usgs.gov USGS responsible for gage maintenance (except LARC). Stephen Berris is USGS NV Data Chief, responsible for gage maintenance.	775-887-7693
2	Washoe Co DEM AKenneston@washoecounty.us Aaron Kenneston is Washoe County Emergency Mgr, operates Washoe EOC. Monitors TRRN2 for flood impacts. in Washoe Co.	775-337-5898
3	Truckee River Flood Project nduerr,purban or eevans@washoecounty.us; floodawareness.com Monitors gages/forecasts, operates Truckee R Flood Warning System. Ed Evans (850-7465), primary contact. Naomi Duerr (850-7420) is Director, Paul Urban (850-7428) Project Mgr. Contact. info @ www.floodawareness.com	775-850-7460
4	US Water Master h2omastr@aol.com, cjblanchard@uswatermaster.org Garry Stone is Water Master, Chad Blanchard is chief deputy. WM pays LARC phone charges, uses gage data/forecasts for reservoir & flood control, water supply mgt.	775-784-5241
5	Reno Emergency Mgr MunnsS@Reno.gov Sandy Munns is Reno Emergency Manager	775-334-1214
6	City of Reno Public Wks John Flansberg is Public Works Director; responsible for monitoring forecasts and stages at this gage for flood effects in Reno.	775-334-2350
7	Sparks Police Dept. Phone is non-emergency dispatch.	775-353-2231
8	Sparks Public Works wseidel@cityofsparks.us Wayne Seidel is Public Works Director. Sparks flood plan based on TRRN2 & VISN2 forecasts.	775-353-2330
9	Sparks Emergency Mgr sdriscoll@cityofsparks.us Steve Driscoll is Sparks EM. Monitors gage forecasts and data for flood impacts on City of Sparks, manages flood operations, oversees emergency operations plan.	775-353-1633
10	Washoe Co Sheriff administrative@washoesheriff.com S.O. monitors gage and forecast data for flood effects in reach. Phone is non-emergency dispatch. Sheriff is Mike Haley.	775-785-4629
11	National Weather Service El Techs maintain LARC, HMTs/SH do QC.	775-673-8100



January 1997 Flood Hydrographs for Truckee River. All Data from USGS Instantaneous Data Archive (http://ida.water.usgs.gov), (Graph Courtesy US Bureau of Reclamation)

Truckee River at Reno NV (TRRN2) HSA: REV January 2011

Photos: Truckee River at Reno Gage Location

Looking downstream (east) from left bank, 7/22/2010, stage: 4.34', about 350 cfs.
Truckee River Bikeway bridge at Giroux Street visible in center left.

Photos: Truckee River at Reno Gage Location

Looking upstream (west) from left bank, 7/22/2010, stage: 4.34', about 350 cfs.
Lower staff gage and crest stage gage visible in center right.

Photos: Truckee River at Reno Gage Location

Looking across river (south) to right bank from the gage site. 7/22/2010, Stage: 4.34', About 350 cfs.
Reno Gazette-Journal office building is located at top of right bank north of Kuenzli Street.

Photos: Truckee River at Reno Gage Location

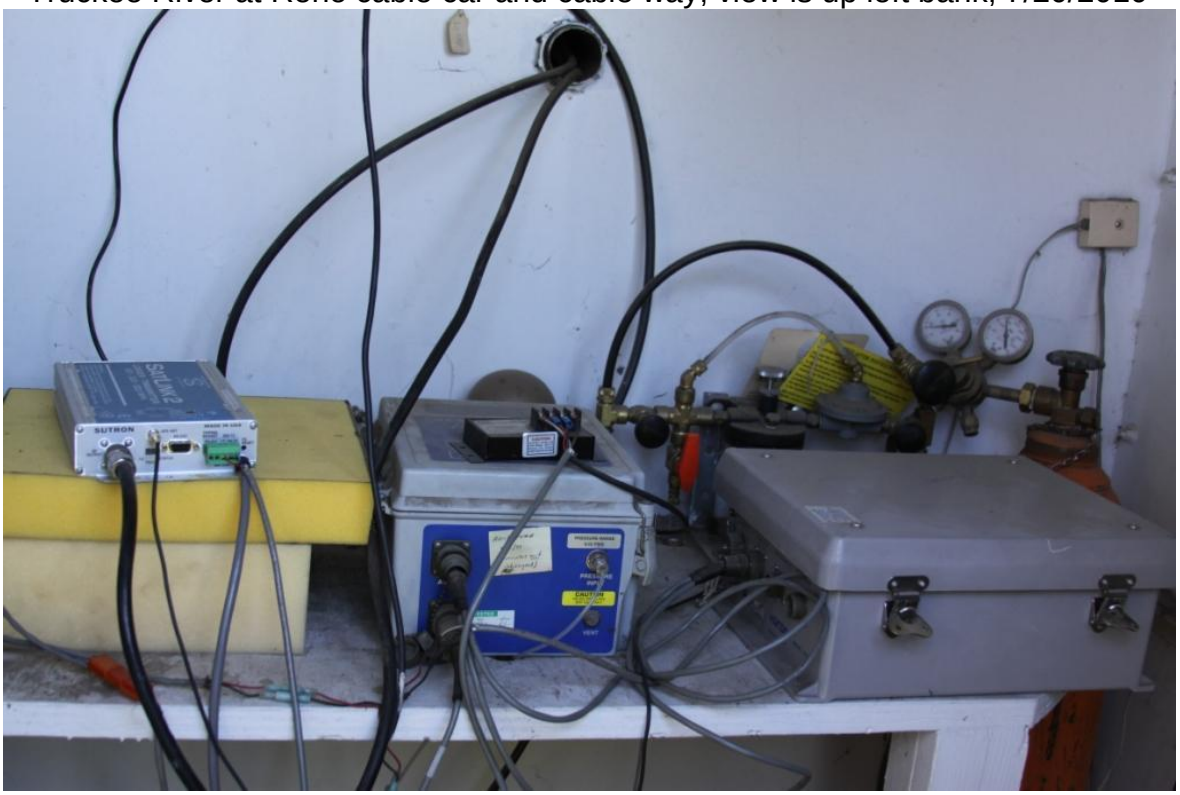
Left photo: Gage house, TRRN2. Right photo: Upper and lower staff gages on left bank (crest stage gage attached to lower staff). Lower staff gage range: 3.3' to 9.4'; upper staff gage range: 8.9' to 16.9'. Gage orifice is attached to lower staff/crest gage. 7/22/2010, Stage: 4.34', About 350 cfs.

Photos: Truckee River at Reno Gage Location

View of lower staff gage. NWS student trainee Zach Tolby is holding top of crest stage gage. Gage orifice pipe can be seen attached to left side of lower staff gage. Lower staff gage range 3.3' to 9.4'. 7/22/2010, Stage: 4.34', About 350 cfs.

Photos: Truckee River at Reno Gage Location

Truckee River at Reno cable car and cable way, view is up left bank, 7/20/2010



Equipment in gage house, 7/20/2010. From left to right: Sutron SatLink2 Data Collection Platform (USGS), Paroscientific PS2 DataLogger/Pressure Transducer (USGS) and Handar LARC (NWS). Phone connection (for LARC) and nitrogen tank (for pressure transducer) on right.